

WHAT IS CLAIMED IS:

1. A method for processing a semiconductor topography, comprising polishing the topography on a polishing pad without depositing water on the polishing pad.
- 5 2. The method of claim 1, wherein a pH of a polishing solution on the polishing pad is substantially uniform during the polishing.
3. The method of claim 1, wherein a pH of a polishing solution on the polishing pad
10 varies by less than about 2.5 during the polishing.
4. The method of claim 1, wherein a pH of a polishing solution on the polishing pad varies by less than about 30 % during the polishing.
- 15 5. The method of claim 1, wherein subsequent to the polishing, a substantial amount of residual slurry particles are present on the topography.
6. The method of claim 1, wherein subsequent to the polishing, the topography is substantially free of agglomerated slurry particles.
- 20 7. The method of claim 1, wherein subsequent to the polishing, the topography is substantially free of slurry particles having a particle size of greater than about 10 μm .
8. A semiconductor topography comprising a polished layer formed on a substrate,
25 wherein a substantial amount of residual slurry particles are present on the polished layer.
9. The topography of claim 8, wherein the residual slurry particles have a particle size of less than about 10 μm .

10. The topography of claim 8, wherein an upper surface of the polished layer is substantially planar.

11. The topography of claim 8, wherein the polished layer comprises less than about
5 200 microscratches.

12. The topography of claim 8, wherein a total number of defects present on the polished layer is less than about 600.

10 13. A method for processing a semiconductor topography, comprising depositing water on a polishing pad in a plurality of dispense intervals during polishing of the topography to reduce a rate of change of a pH of a polishing solution on the topography.

14. The method of claim 13, wherein each of the plurality of dispense intervals
15 comprise a dispense time of less than about 30 seconds.

15. The method of claim 13, wherein one or more of the plurality of dispense intervals comprise a dispense time of less than about 3 seconds.

20 16. The method of claim 13, wherein the polishing solution comprises slurry present on the topography prior to the polishing.

17. The method of claim 13, wherein additional polishing solution is not deposited on the polishing pad during the polishing.

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18. The method of claim 13, wherein the topography comprises an upper layer of oxide formed across the topography, and wherein the oxide is substantially planar subsequent to the polishing.

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19. A method for processing a semiconductor topography, comprising:

polishing the topography on a primary polishing pad during a primary polishing step without depositing water on the primary polishing pad; and

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polishing the topography on a final polishing pad during a final polishing step, comprising depositing water on the final polishing pad in a plurality of dispense intervals to reduce a rate of change of a pH of a polishing solution on the topography.

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20. The method of claim 19, further comprising transferring the topography from the primary polishing pad to the final polishing pad subsequent to the primary polishing step, wherein a substantial amount of residual slurry particles are present on the topography during the transferring.

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